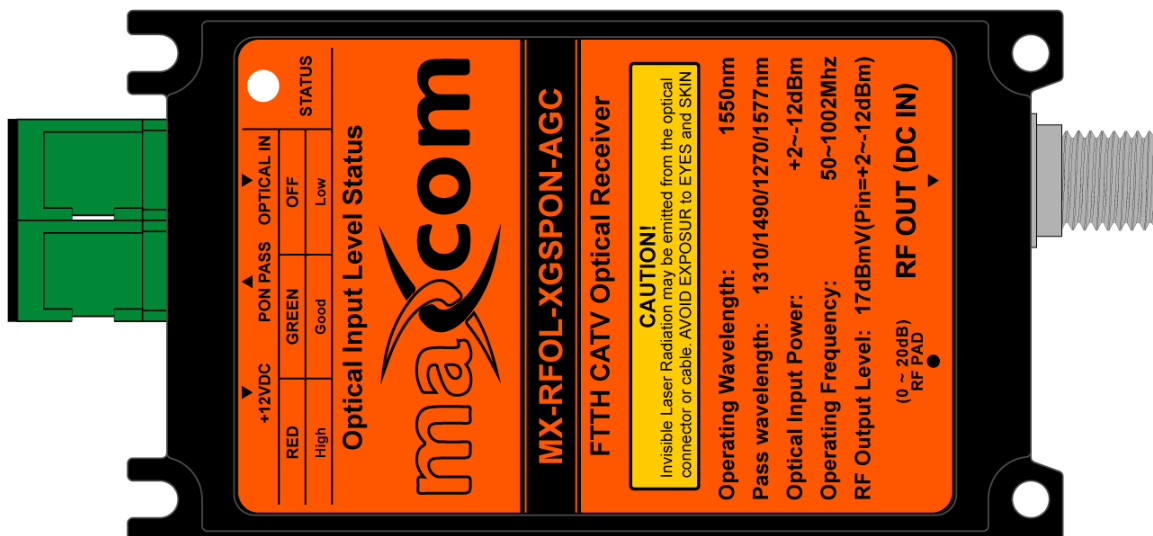




# MX-RFOL-XGSPON-AGC

Mini Optical Receiver with PON pass through port

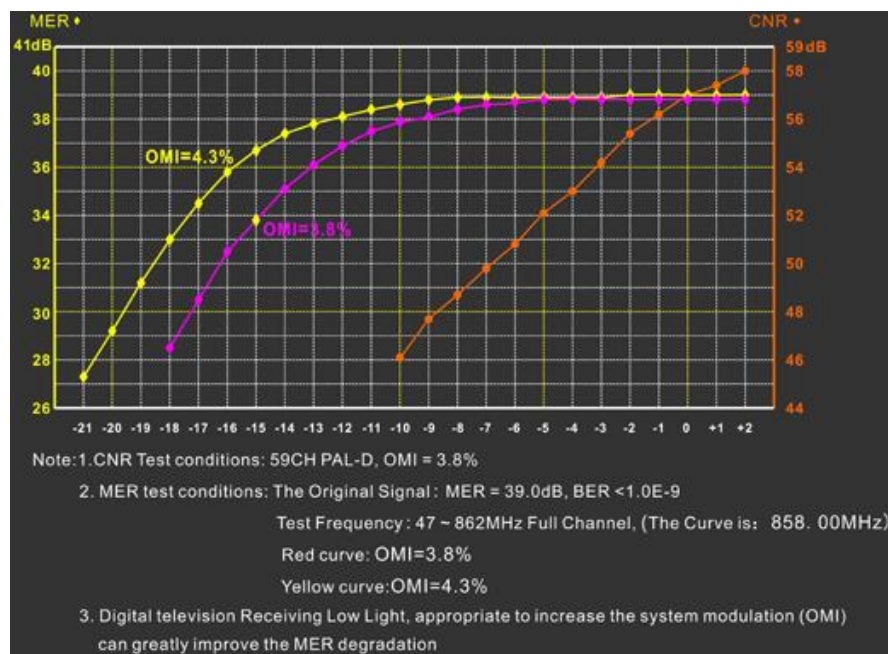
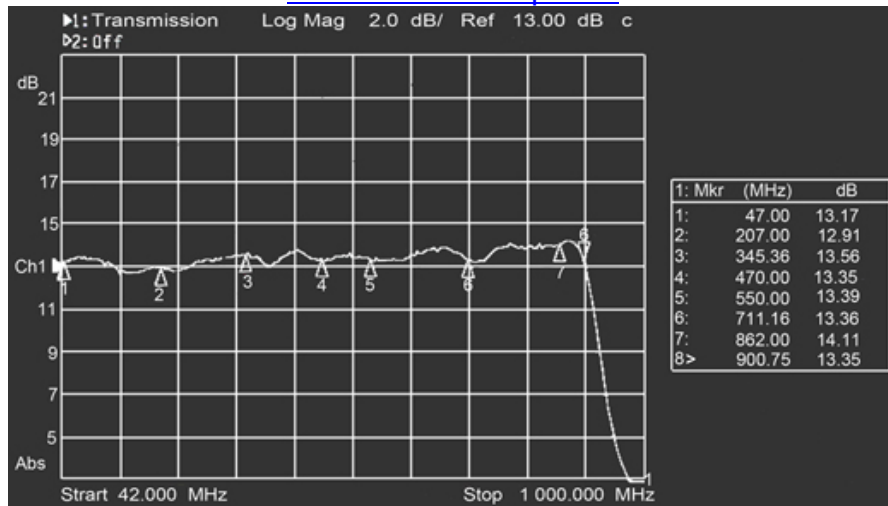


The Maxcom MX-RFOL-XGSPON-AGC series CATV optical receiver supports a bandwidth of 47~1002MHz (optional 1.2 GHz). Works well for Residential, Business, Hospitality and Government applications. As an RF/ Cable TV optical receiver unit, it provides a high index and low power consumption with impressive performance at an exceptionally low cost.

The Maxcom MX-RFOL-XGSPON-AGC series employs a high sensitivity receiving tube and special low noise matching circuit. With a 3.8% OMI, full channel bandwidth, at -8dBm optical receive power, the CNR will continue to reach a high index of 45dB. The MX-RFOL-XGSPON-AGC is equipped with a convenient LED display light that will indicate the optical input power between -12 and +2 dBm. Automatic Gain Control (AGC) provides an average RF output of +17 dBmV when input Optical power is between -12 and +2 dBm.

The PON Pass through port supports both GPON and XG(S)PON RF Overlays. PON ports pass GPON wavelengths of 1310 and 1490nm, as well as XG(S)PON wavelengths of 1270 and 1577nm.

The Maxcom MX-RFOL-XGSPON-AGC series provides very flexible powering options by offering standard power adapters and remote powering options for instances where power may not be available at the receiver location.



**DIGITAL TV TEST DATA (Pin=+2.0dBm~-12.0dBm )**

Pin (dBm)	Vo (dBmV)	MER (dB)	BER	
			POST	PRE
2	17.4	35.9	<1.0E-9	<1.0E-9
0	17.3	35.9	<1.0E-9	<1.0E-9
-2	17.6	34.6	<1.0E-9	<1.0E-9
-4	16.9	34.1	<1.0E-9	<1.0E-9
-6	18.1	33.4	<1.0E-9	<1.0E-9
-8	17.5	35.5	<1.0E-9	<1.0E-9
-10	16.8	32.9	<1.0E-9	<1.0E-9
-12	17.3	31.6	<1.0E-9	<1.0E-9

Note- Test condition: Levels may vary based on source OMI and other TX factors

1. Test Signal: MER:37dB, BER:<1.0E-9, QAM64 62CH

2. TX Input level:18dBmV.

3.The Test Frequency:131~862MHz (REF CH 15)

## TEST DATA

Pin(dBm)	+2	0	-2	-4	-6	-8	-10
Vo(dBmV)	17.4	17.3	17.6	16.9	18.1	17.5	16.8
CNR(dB)	59	57.7	55.6	53.2	50.8	48.5	45.2
CTB(dB)	68	70	70	70	68	65	64
CSO(dB)	65	65	66	66	65	63	62

Remarks: 1. Test condition: NTSC-D79CH, OMI=3.8%  
 2. Built-in PAD is 0dB attenuate. 3. Test sample: MX-RFOL-XGSPON

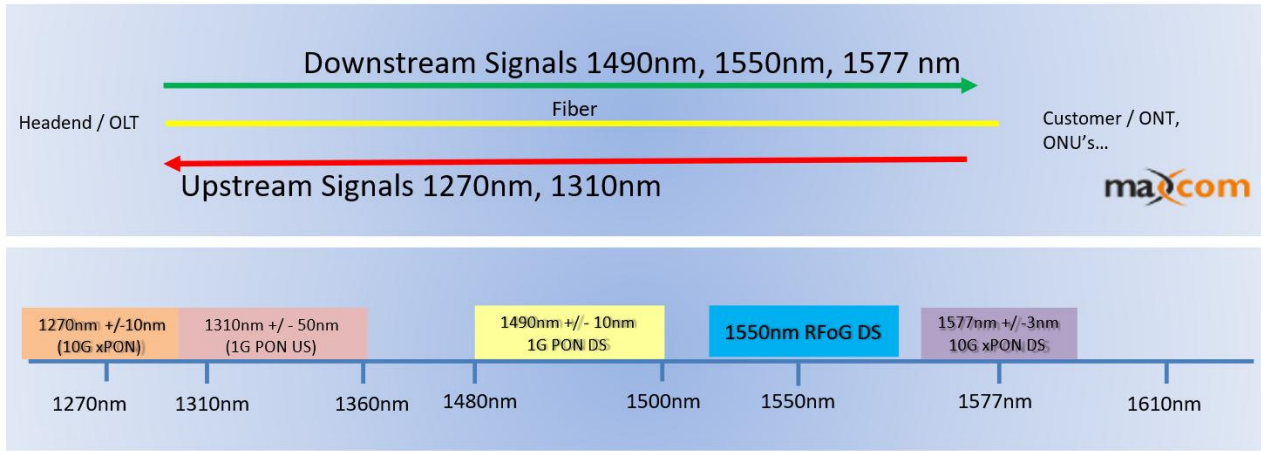
## TECHNICAL INDEX

Performance		Index	Supplement	
Optic feature	Input wavelength	(nm)	1550	1540nm ~ 1560nm
	Pass wavelength 1	(nm)	1310 & 1490nm	GPON wavelengths
	Pass wavelength 2	(nm)	1270 & 1577nm	XG(S)PON wavelengths
	Insertion loss of PON port	(dB)	< .81	Typ < .75 on PON wavelength.
	Channel Isolation	(dB)	≥40	1550 & 1490nm
	Responsivity	(A/W)	≥0.9	1550nm
	Receiving power	(dBm)	+3 ~ -12 Typical	(+2~-10 AGC range best performance) Below -12 dBm *see note 1 below
	Optical return loss	(dB)	≥55	
	Optical fiber connector		SC/APC	
RF feature	Work bandwidth	(MHz)	47 ~ 1002	Optional to 1.2 GHz
	Flatness	(dB)	≤±1.0	
	Output level (Vo1)	(dBmV)	17	Pin: +2dBm
	Output level (Vo2)	(dBmV)	17	Pin: -2dBm
	Output level adjust	(dB)	0 ~ 18	Built-in Manual RF PAD adjust
	Return loss	(dB)	≥12	47 ~ 1002 MHz
	Output impedance	(Ω)	75	
	Output port number		1	
	RF tie-in		F-Female	
Link feature	Test channel	CH	59CH (PAL-D)	NTSC/80CH
	OMI	(%)	3.8	
	CNR1	(dB)	56.6	Pin: -2dBm
	CNR2	(dB)	48.5	Pin: -8dBm
	CTB	(dB)	≤70	Pin: -2dBm
	CSO	(dB)	≤66	Pin: -2dBm
	HUM	(dB)	≤60	
General feature	Power supply	(V)	+12VDC	±1.0V
	Power Consume	(W)	≤2	+12VC, 200mA
	Operating temperature	(°C)	-40 ~ +65	
	Storage temperature	(°C)	-40 ~ 85	
	Working relative humidity	(%)	5 ~ 90	
	Size	(mm) inch	59×98×23 MM 2 5/16 x 3 7/8 x 15/16"	(W)×(D)×(H) Not including F port or fiber connector

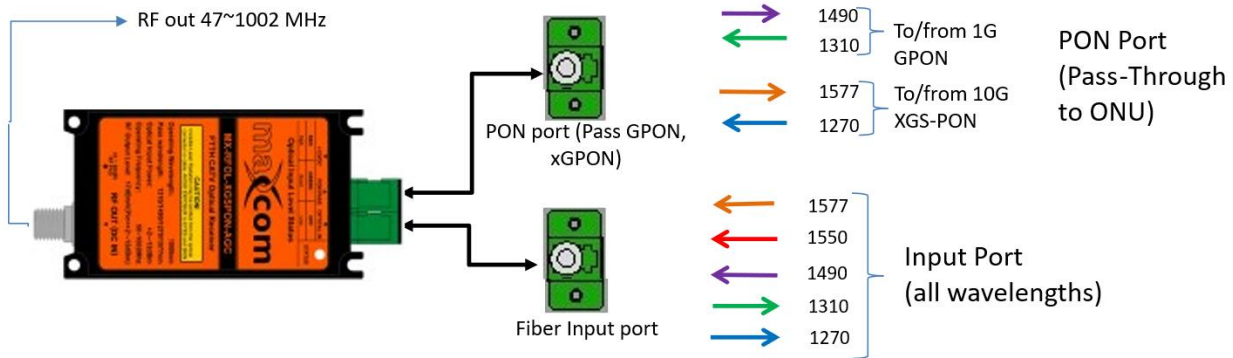
Levels may vary based on source OMI and other TX factors.

1. If below optical input falls below -12 dBm, unit may continue to function without AGC resulting in reduced RF output and MER.

WAVELENGTH DETAIL for GPON, xGPON, and RF Overlay:



Built-in WDM



Fiber out 1310/1490 (GPON)  
Fiber out 1270/1577 XG(S)PON  
To customer ONU/ONT terminal

Fiber in (all wavelengths)  
1270, 1310, 1490, 1550, 1577nm

Built-in WDM Filter – The 1550 nm signal is routed to the optical/RF receiver. GPON and XGPON Wavelengths are passed through to fiber output connector to the customer ONU



12 VDC PS  
Or  
Optional Remote PS w/  
power inserter



maxcom  
MX-RFOL-XGSPON-AGC

RF signal



# Functional Diagram of MX-RFOL-XGSPON-AGC Receiver

MX-RFOL-XGSPON-AGC

Flexible Powering options, because power isn't always available where you need it. Receiver may be powered with a direct plug-in standard PS, or remotely using a coax power inserter and remote PS

New Flexible RF Overlay Fiber Receiver with GPON and XG(S)PON WDM Port



GPON and XG(S)PON pass-through

Fiber Input

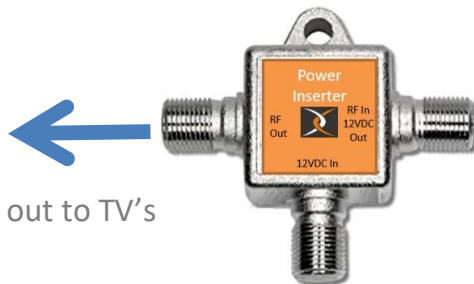
Standard Power Adapter Included  
(Direct plug-in)  
Available with North American or Euro style adapter



LED display lights, for optical power

Forward RF output, 12 VDC input port

Optional Power Inserter



RF out to TV's

Optional Remote Power Supply  
12VDC Coax F-Port output

Available with North American or Euro style adapter

DC-12V over Coax



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